

## CLAIMS

We claim:

1. A method of establishing an active set for a mobile station operating in a cellular

5 wireless system, the method comprising:

determining a physical position of the mobile station;

querying a sector coverage database to identify at least one sector that encompasses the

physical position; and

establishing for the mobile station an active set comprising the at least one sector.

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2. The method of claim 1, further comprising:

sending an indication of the active set to the mobile station.

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3. The method of claim 2, wherein the active set consists of only one sector.

4. A method comprising:

repeating the method of claim 2 as the mobile station moves from a first physical position

to a second physical position.

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5. A method of establishing an active set for a mobile station operating in a cellular

wireless system, the method comprising:

determining a physical position of the mobile station;

establishing a proposed set of active sectors; and

using the physical position of the mobile station as a basis to select a subset of active sectors from the proposed set of active sectors, the subset of active sectors defining the active set.

6. The method of claim 5, further comprising:

5 sending an indication of the active set to the mobile station.

7. The method of claim 6, wherein determining the physical position of the mobile station comprises:

receiving a signal from the mobile station indicating the mobile station position.

10 8. The method of claim 6, wherein determining the physical position of the mobile station comprises:

querying a mobile positioning center to obtain an indication of the physical position of the mobile station.

15 9. The method of claim 6, wherein establishing the proposed set of active sectors comprises:

identifying at least one sector that encompasses the physical position, the at least one sector defining the proposed set of active sectors.

20 10. The method of claim 9, wherein identifying at least one sector that encompasses the physical position comprises:

querying a sector coverage database to identify the at least one sector that encompasses the physical position.

11. The method of claim 6, wherein the subset of active sectors consists of only one  
5 sector, and wherein using the physical position of the mobile station as a basis to select the subset of active sectors comprises:

selecting from the proposed set of active sectors a sector to which the mobile station is closest.

10 12. The method of claim 6, wherein the subset of active sectors consists of only two sectors, and wherein using the physical position of the mobile station as a basis to select the subset of active sectors comprises:

selecting from the proposed set of active sectors two sectors to which the mobile station is closest.

15 13. The method of claim 6, wherein sending an indication of the active set to the mobile station comprises:

sending a Handoff Direction Message (HDM) to the mobile station, the HDM including the indication of the active set.

20 14. A soft handoff method comprising:

repeatedly performing the method of claim 6 as the mobile station moves from a first position to a second position,

wherein the proposed set of active sectors when the mobile station is at the first position is different than the proposed set of active sectors when the mobile station is at the second position.

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15. A soft handoff method comprising:

performing the method of claim 6 when the mobile station is at a first position, thereby establishing a first active set; and

10 performing the method of claim 6 when the mobile station has moved from the first position to a second position, thereby establishing a second active set different than the first active set.

15. A method comprising:

periodically performing the method of claim 6.

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17. A method of establishing an active set for a mobile station operating in a cellular wireless system, the method comprising:

determining a physical position of the mobile station;

20 querying a sector coverage database to identify a plurality of sectors that each encompass the physical position;

selecting from the plurality of sectors at most two sectors to which the mobile station is closest, the at most two sectors defining an active set; and  
sending to the mobile station an indication of the active set.

18. A system for establishing an active set for a mobile station operating in a cellular wireless system, the system comprising:

means for determining a physical position of the mobile station;

means for establishing a proposed set of active sectors;

5 means for using the physical position of the mobile station as a basis to select a subset of active sectors from the proposed set of active sectors, the subset of active sectors defining the active set; and

means for providing an indication of the active set for transmission to the mobile station.

10 19. A system for establishing an active set for a mobile station operating in a cellular wireless system, the system comprising:

a processor;

data storage;

15 program instructions stored in the data storage and executable by the processor to cause the processor (i) to determine a physical position of the mobile station, (ii) to establish a proposed set of active sectors, (iii) to use the physical position as a basis to select a subset of active sectors from the proposed set of active sectors, the subset defining an active set, and (iv) to provide an indication of the active set for transmission to the mobile station.